

Air Education and Training Command



Occupational Survey Report AFSC 1A3X1 Airborne Communications & Electronics Systems

U.S. AIR FORCE

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Integrity - Service - Excellence

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Air Force Occupational Measurement SQ



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Overview



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- Survey background
- Survey results
- Implications



Survey Background



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Survey initiated to obtain data to:

- Evaluate current classification and training documents
- Support promotion test development
- Evaluate potential merger of 1A3X1 and 1A5X1 thru combined study

Last Occupational Survey Report (OSR) – June 1999

Current survey data collected – October 2001 - February 2002

Components surveyed:

- Active Duty: 3-, 5-, 7-, 9-Skill Levels, and CEM
- Guard: 5-, 7-, and 9-Skill Levels
- Reserve: 5-, 7-, and 9-Skill Levels





Survey Sample Characteristics



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	<u>AD</u>	<u>ANG</u>	<u>AFRC</u>	<u>Total</u>
Assigned*	783	76	59	918
Mailed Out	682	76	53	811
Sample	424	23	19	466
Usable Returns	62%	30%	36%	57%

- Average time in career field for AD: 7 yrs 8 months
- Average TAFMS for AD: 11 yrs 3 months
- Percent of AD in first enlistment: 16%

* Assigned as of October 01



Skill & Paygrade Characteristics



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Skill-Level Distribution

	Assigned*	Sample
3-Level -	8%	8%
5-Level -	48%	50%
7-Level -	40%	38%
9-Level -	3%	3%
CEM -	--	1%

Paygrade Distribution

	Assigned*	Sample
E-2/E-3	12%	8%
E-4	16%	16%
E-5	30%	30%
E-6	22%	26%
E-7	16%	16%
E-8/E-9	4%	4%

* Assigned as of October 01

-- Indicates less than 1%



Command Representation



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Command

Assigned*

Sample

ACC

47%

50%

AIA

12%

13%

AMC

7%

10%

AFSOC

7%

3%

PACAF

4%

4%

EUR

3%

4%

AETC

2%

2%

AFMC

2%

3%

OTHER

2%

2%

ANG

8%

5%

AFRC

6%

4%



Missions Performed



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Primary Mission

ABCCC (EC-130E)	5%
AWACS, not NATO (E-3)	20%
Cobra Ball (RC-135S)	4%
Combat Sent (RC-135U)	3%
Combat Shadow (MC-130P)	4%
CINC Support (C-9/20/32/37/VC-25)	1%
Compass Call (EC-130H)	2%
JSTARS (E-8)	5%
NAOC (E-4)	15%
NATO AWACS (E-3)	4%
Open Skies (OC-135B)	1%
Operational Support Airlift (C-9/37)	1%
Rescue (HC-130)	2%
Rivet Joint (RC-135V/W)	15%
SAM (C-9/20/32/37/VC-25)	11%
Staff	1%



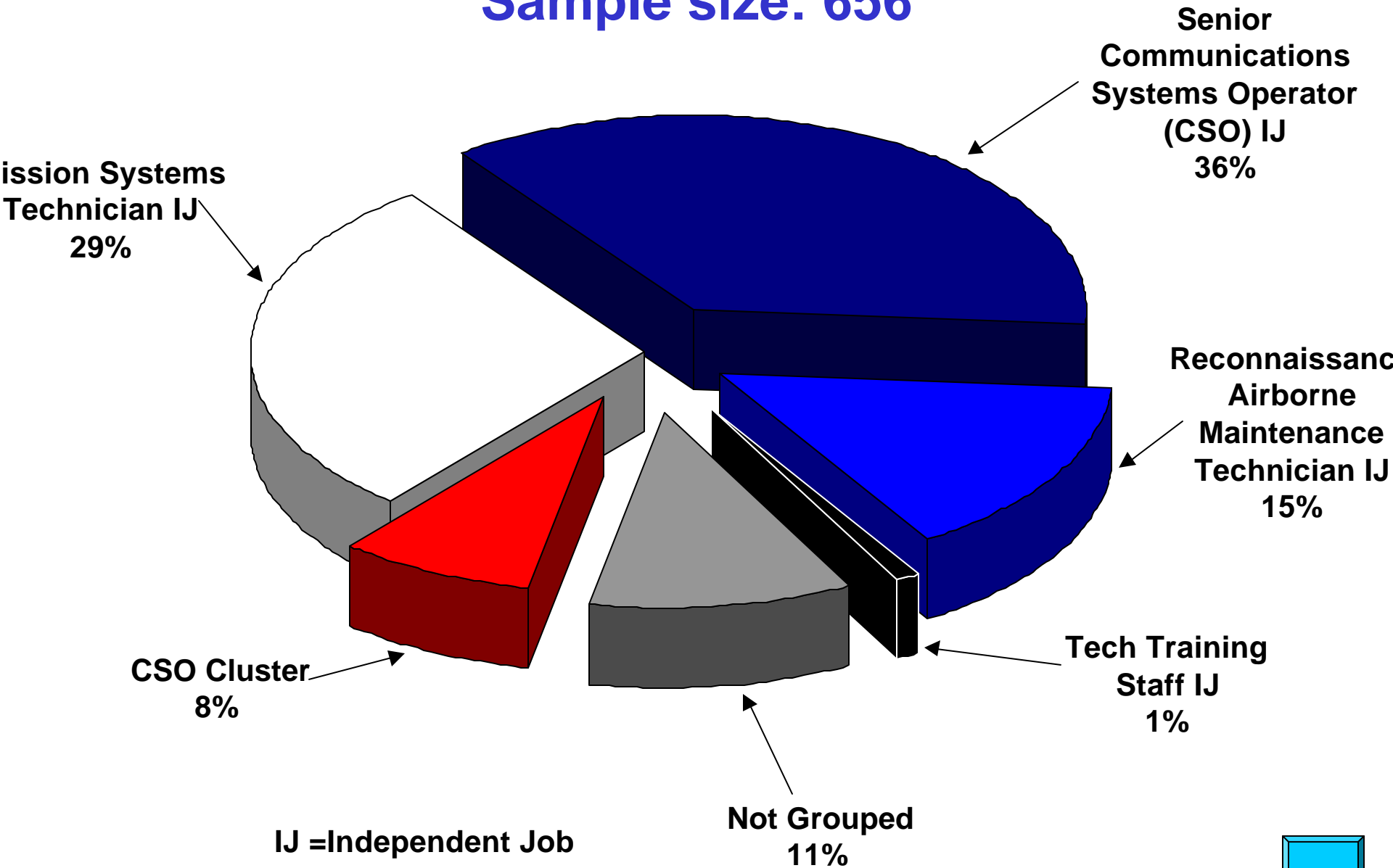


Job Structure



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Sample size: 656





Percent Time Spent on Duties (Across Aircraft Platforms)



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	C-20 (N=21)	C-32 (N=14)	C-37 (N=6)	C-135 (N=5)	E-3 (N=121)	E-4 (N=66)	E-8 (N=22)
Mission Planning, Premission, Preflight	20	17	25	20	20	18	21
Ops & Maintenance of C-E Systems	35	34	37	32	46	42	40
General Airborne Comm or Mission Systems	13	14	13	12	11	12	14
Mobility and Contingency	4	3	4	5	6	8	4
Management and Supervision	12	15	11	14	8	8	9
Training	6	8	2	7	4	5	4
General Admin and TO System	8	8	7	7	4	6	7
General Supply and Equipment	2	1	1	3	1	1	1



Percent Time Spent on Duties (Across Aircraft Platforms)



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		EC- 130 (N=46)	EC- 135 (N=4)	HC- 130 (N=20)	MC- 130 (N=22)	OC- 135 (N=6)	RC- 135 (N=93)	VC- 25 (N=7)
A	Mission Planning, Prepermission, Preflight	16	24	23	20	17	14	13
B	Ops & Maintenance of C-E Systems	41	44	28	26	24	51	45
C	General Airborne Comm or Mission Systems	15	12	14	16	21	12	12
D	Mobility and Contingency	5	1	10	7	4	4	2
E	Management and Supervision	9	5	10	12	18	8	12
F	Training	6	3	5	6	8	5	6
G	General Admin and TO System	6	10	8	11	3	3	8
H	General Supply and Equipment	2	1	2	2	5	3	2



Career Ladder Progression



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- 3-, 5-, and 7-skill-level personnel
 - Work in the most technical jobs in the career field
 - Spend most of their time on technical tasks
- 9-skill-level and CEM personnel
 - Continue to perform technical tasks
 - However, significant increase in time spent on management and supervisory duties





Career Ladder Regression

Percent Time Spent on Duties



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	DAFSC 1A331 (N=38)	DAFSC 1A351 (N=234)	DAFSC 1A371 (N=175)	DAFSC 1A391 (N=13)	DAFSC 1A300 (N=6)
Mission Planning, Prepermission, Preflight	23	18	16	16	15
Ops & Maintenance of C-E Systems	47	45	38	31	20
General Airborne Comm or Mission Systems Activities	13	12	12	13	13
Mobility and Contingency	7	6	5	6	4
Management and Supervision	3	7	13	20	32
Training	1	5	7	4	6
General Admin and TO System	5	5	7	8	8
General Supply and Equipment	1	2	2	2	2



Flight Environment Personnel Representative Tasks



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Percent

Members

Performing

Tasks

(N=70)

perform in-flight checklist procedures	81
perform premission requirements, such as reviewing FCIFs, MORFs, MCIFs, general information files, or annotating flight orders	79
review emergency procedures	73
secure personal equipment on aircraft during preflight	69
perform preflight inspections, other than life support inspections	64
assemble professional or personal flight gear	63
participate in premission briefings, other than conducting	63
review AFTO Forms 781	61
practice or perform emergency procedures	61
secure mission equipment on aircraft during preflight	61
operate built-in test equipment (BITE)	61



First Enrollment Personnel Emergency Equipment



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Equipment	Percent Responding (N=70)
Emergency Exits	94
Crash Axes	93
Firefighter's Masks	91
First-Aid Kits	91
Fire Extinguishers	90
Oxygen Regulators	90
Alarm Bells/Signals	87
Escape Ropes	84
Life Raft Accessory/Survival Kits	84
Life Rafts	84
Portable Oxygen Units	83
Nomex Gloves	81
Firefighter's Gloves	77
Life Preserver Units (LPU's)	77



Comm or Electronics Equipment & Systems



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Equipment and Systems	(N=70)
UHF Communications Systems	81
Cryptographic Systems, Data	71
VHF Communications Systems	69
Keyboards	67
Encryption Devices	66
HF Communications Systems	64
Monitors	64
Receivers	64
Cryptographic Systems, Voice	63
Satellite Systems, UHF	63
Secure Data Link Systems	63
Data Transfer Devices, such as CYZ-10	61
RF Amplifiers	59
Printers	53
Satellite Systems, Military	51
Business Data	50



Training Emphasis (TE) Ratings

**AETC**TE Rating

Review emergency procedures	6.00
Operate computer systems	5.63
Review AFTO Forms 781	5.61
Operate emergency equipment	5.47
Operate UHF SATCOM voice systems	5.26
Perform initialization of mission systems	5.21
Perform in-flight checklist procedures	5.18
Maintain current status of flight manuals, safety and operational supplements, or flight crew checklists	5.05
Perform crew coordination activities	5.03
Determine and perform alternate procedures or work-arounds for malfunctioning equipment	5.03



Tasks with Highest Task Difficulty (TD) Ratings



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	<u>TD Rating</u>
• Repair flight director/autopilot systems	7.66
• Repair FMSs, such as FMS 800	7.65
• Repair jamming systems	7.61
• Repair fiber optics systems	7.53
• Repair software	7.15
• Repair TIBSs	7.09
• Repair radar pulse reception systems	7.06
• Repair radar transmission systems	7.06
• Repair radar MMI systems	7.06
• Repair radar cooling systems	7.06
• Repair radar Doppler reception systems	7.06



Automated Training Indicator (ATI) Ratings

The AETC logo, featuring the letters "AETC" in a stylized, blue, 3D font.

	<u>ATI</u>
• Perform emergency destruct procedures	18
• Troubleshoot UHF SATCOM voice	18
• Operate high-frequency (HF) voice systems	18
• Operate built-in test equipment (BITE)	18
• Perform in-flight checklist procedures	18
• Obtain classified materials or documents	18
• Perform initialization of mission systems	18
• Obtain and secure COMSEC material	18
• Operate emergency equipment	18
• Operate cryptographic loading devices	18
• Practice or perform emergency procedures	18
• Troubleshoot HF voice systems	18



1A3X1 Specialty Training Standard (STS) Analysis



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1A3X1 STS is generally supported by survey data

Some STS items may need proficiency code review

- Several uncoded STS items matched to JI tasks performed by more than 20 percent of first-job and/or first-enlistment members

Several technical tasks performed by 20 percent or more of members were not referenced to STS

- These should be reviewed for possible inclusion in STS to support technical training for merged AFSCs





MAXX-100 Proficiency Codes Requiring Review



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Unit	Learning Objective	Prof Code	Percent Members Performing		Tng Emp	Tsk Dif	ATI
			1st Job	1st Enl			
.3.4. Task	Isolate malfunctions – VHF Systems B0080. Troubleshoot VHF AM Systems	-	28	47	3.71	4.79	12
.7.4. Task	Isolate malfunctions – Anti-Jam Systems B0092. Troubleshoot Have Quick systems	-	21	40	3.24	6.06	12
.8.2.3. Task	Operate JTIDS B0124. Operate JTIDS	-	24	34	3.16	5.65	12
.8.2.4. Task	Isolate malfunctions - JTIDS B0125. Troubleshoot JTIDS	-	28	40	2.87	6.35	15
.9.4. Task	Operate Military SATCOM Systems/ DAMA B0049. Operate UHF SATCOM voice systems	-	41	53	5.26	4.37	18

Mean TE Rating is 1.71, Standard Deviation is 1.31 (HIGH TE= 3.02)

Mean TD Rating is 5.00, Standard Deviation is 1.00 (HIGH TD= 6.00)



Tasks not referenced to 1A3X1 STS



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Examples

Tasks		Percent Members Performing				
		1 st	1 st	Trg	Tsk	
		Job	Enl	Emp	Dif	ATI
B0045	Repair HF voice systems	17	33	2.26	6.20	15
B0051	Repair UHF SATCOM voice systems	17	34	2.55	6.49	15
B0072	Repair UHF AM voice systems	10	30	2.58	6.18	15
B0102	Repair HF data systems	17	30	1.89	6.23	15
B0105	Repair UHF SATCOM data systems	14	30	2.29	6.59	15
B0126	Repair JTIDS	21	33	1.79	6.92	15
B0129	Repair digital data distribution systems, such as LANs or buses	21	33	2.53	6.82	15



Job Satisfaction Indicators (AD) (AFSC 1A3X1 vs. Comparative Sample)



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	1-48 Months		49-96 Months		97+ Months	
	2002 1A3X1 (N=70)	*Comp Sample (N=280)	2002 1A3X1 (N=110)	*Comp Sample (N=188)	2002 1A3X1 (N=244)	*Comp Sample (N=493)
Job interesting	77	58	71	67	88	71
Talents well utilized	74	69	78	73	91	81
Training well utilized	85	82	88	84	87	82
Sense of accomplishment	64	50	69	59	79	63
Plan to reenlist	50	50	54	61	59	56

* Comparative sample of AFSCs surveyed in the last 12 months includes 1C3X1 & 1C4X1.



Job Satisfaction Indicators (AD)

(Current 1A3X1 vs. Previous 1A3X1 Study)



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	1-48 Months		49-96 Months		97+ Months	
	2002 1A3X1 (N=70)	1999 1A3X1 (N=40)	2002 1A3X1 (N=110)	1999 1A3X1 (N=177)	2002 1A3X1 (N=244)	1999 1A3X1 (N=82)
Job interesting	77	68	71	73	88	80
Talents well utilized	74	70	78	79	91	87
Training well utilized	85	88	88	88	87	82
Sense of accomplishment	64	55	69	68	79	79
Plan to reenlist	50	45	54	53	59	52



Job Satisfaction Indicators (Across Aircraft Platforms)



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	C-20 (N=21)	C-32 (N=14)	C-37 (N=6)	C-135 (N=5)	E-3 (N=287)	E-4 (N=66)	E-8 (N=42)
Job interesting	86	86	100	80	73	82	83
Talents well utilized	100	93	83	100	79	83	88
Training well utilized	86	93	84	100	91	89	96
Sense of accomplishment	81	86	100	80	71	73	71
Plan to reenlist	57	58	83	60	56	61	69



Job Satisfaction Indicators (Across Aircraft Platforms)



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	EC-130 (N=46)	EC-135 (N=4)	HC-130 (N=20)	MC-130 (N=22)	OC-135 (N=6)	RC-135 (N=93)	VC-25 (N=7)
Job interesting	74	100	65	91	83	86	100
Talents well utilized	83	100	65	91	100	87	100
Training well utilized	74	75	70	95	67	87	100
Sense of accomplishment	61	50	65	82	83	72	100
Plan to reenlist	59	75	65	68	50	49	71



Retention Dimensions First-Term Airmen (N=69)



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	Percent Responding	Average
Planning to Reenlist (N=34)		
Military lifestyle	56	2.32
Medical or dental care for AD member	53	2.44
Pay and allowances	53	2.28
Job security	50	2.59
Military-related education & training opportunities	50	2.47
Planning to Separate (N=35)		
Military lifestyle	49	1.76
Pay and allowances	43	2.20
Off-duty education and training opportunities	34	2.83
Civilian job opportunities	34	2.33
Location of present assignment	34	2.25

Scale: 1 = slight influence, 2 = moderate influence, 3 = strong influence





Retention Dimensions

Second-Term Airmen (N=109)



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	Percent Responding	Average
Planning to Reenlist (N=59)		
Bonus or special pay	78	2.63
Job security	73	2.58
Pay and allowances	66	2.46
Retirement benefits	64	2.66
Military lifestyle	59	2.23
Planning to Separate (N=50)		
Pay and allowances	60	2.23
Number/duration of TDYs or deployments	48	2.54
Military lifestyle	46	2.17
Unit manning	40	2.80
Civilian job opportunities	40	2.65

Scale: 1 = slight influence, 2 = moderate influence, 3 = strong influence





Retention Dimensions

Career Airmen (N=163)



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Planning to Reenlist (N=144)	Percent Responding	Average
Retirement benefits	71	2.71
Job security	63	2.51
Military lifestyle	51	2.33
Medical or dental care for AD member	49	2.44
Pay and allowances	49	2.25

Planning to Separate (N=19)

Pay and allowances	63	2.25
Civilian job opportunities	42	2.62
Senior Air Force leadership	37	2.86
Unit resources	37	1.86
Promotion opportunities	32	2.67

Scale: 1 = slight influence, 2 = moderate influence, 3 = strong influence





Summary of Results



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Career ladder progression typical

- Highly technical at 3-, 5-, and 7-skill levels progressing to more managerial at 9-skill level and beyond

Career ladder documents generally supported by survey data

- Review of some items warranted

Job satisfaction indicators

- 1A3X1 job satisfaction is higher overall compared to previous study
- Higher when compared to similar AFSCs, especially in the areas of expressed job interest and sense of accomplishment among first-term airmen and career airmen



Questions?



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Visit our web site at:

<https://www-r.omsq.af.mil/OMY/indexomy.htm>

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Back-Up Slides



Job Survey Background



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- Previous JI and OSR
 - JI: Jul 98, Lt McAmis
 - OSR: Jun 99, Lt Hosler
 - Programming Support - Mrs. Guesman
- Issues from Last Post-Analysis Review
 - None





JI Development (# Interviewed)



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- Keesler AFB, MS (Tech School) (7) 8 May
- Langley AFB, VA (1) 29 May
- Offutt AFB, NE (9) 5 Jun
- Tinker AFB, OK (5) 7/21 Jun
- Randolph AFB, TX - SKT Team 19 Jun
- Robins AFB, GA (4) 27 Jun
- Davis-Monthan AFB, AZ (6) 3 Jul
- Hurlburt Field, FL (4) 13 Jul
- Eglin AFB, FL (5) 14 Jul
- Duke Field, FL (3) 15 Jul
- Harrisburg IAP, PA (5) 25 Jul
- Andrews AFB, MD (6) 27 Jul





Job Structure Glossary



- **Job:** A group of similar *positions* where incumbents perform many of the same tasks and spend relatively the same amount of time performing these tasks
- **Cluster:** A series or group of related *jobs* which are distinguishable from each other on some variable (weapon system maintained, ratio of supervisory to technical tasks, etc.)
- **Independent Job:** A job that does not fall within any cluster
- **N:** Number in sample



Career Ladder Progression



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- “Typical” career ladder progression
 - **3-Skill-Level** apprentices perform a very technical job which include very few administrative/supervisory tasks
 - **5-Skill-Level** journeymen still primarily perform a technical job, but acquire a mix of administrative/supervisory tasks
 - **7-Skill-Level** managers, and above, primarily perform supervisory, managerial, and administrative tasks, with relatively few technical tasks
- “Atypical” career ladder progression
 - **7-Skill-Level** personnel are still spending a significant amount of their total job time performing technical duties, with relatively few administrative/supervisory tasks



Training Document Analysis



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- Tasks from job inventory are matched to items in the STS and POI
 - Match is usually conducted with technical school personnel
- Final product provides technical school with data indicating applicability of training documents to work performed in the field in terms of:
 - Percent members performing (PMP) from AETCI 36-2601
 - » 20% PMP for STS
 - » 30% PMP for POI
 - TE and TD ratings
- Listing of tasks not referenced to training document also provided
 - May indicate areas where training coverage is lacking





Task Factor Definitions



- **Training Emphasis (TE):** Task list completed by senior NCOs identifying those tasks that should be emphasized for structured training of first-term airmen
- **Task Difficulty (TD):** Task list completed by senior NCOs which rates the relative difficulty of each task to learn
- **Automated Training Indicators (ATI):** Indicators derived from comparing percent performing data with TE and TD data to assist in making training decisions





Predictive Retention Indicators



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- Military lifestyle
- Pay and allowances
- Bonus or special pay
- Retirement Benefits
- Military related education/Training opportunities
- Off-duty education and training opportunities
- Medical or dental care for active duty member
- Medical or dental care for family members
- Base housing
- Base services
- Childcare needs
- Spouse's career
- Civilian job opportunities
- Equal employment opportunities
- Number of PCS moves
- Location of present assignment
- Number/Duration of TDY's or deployments
- Work schedule
- Additional duties
- Job security
- Enlisted Evaluation System
- Promotion opportunities
- Training/Experience of unit personnel
- Unit manning
- Unit resources
- Unit readiness
- Recognition of efforts
- Esprit de corps/Morale
- Leadership of immediate supervisor
- Senior Air Force leadership

